

NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

NAVY FLYING CLUBS: MANAGEMENT CONTROL
SYSTEMS AND PERFORMANCE MEASURES

by

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December 2002

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**NAVY FLYING CLUBS: MANAGEMENT CONTROL SYSTEMS AND
PERFORMANCE MEASURES**

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ABSTRACT

The Monterey Navy Flying Club has undergone tremendous change in the last decade. The club has sustained a painful downsizing due to the closure of Fort Ord and the substantial reduction in number of members, flight hours, aircraft, and staff. During the peak period when Fort Ord was open the volume of members and flight hours allowed informal short-term planning to fulfill all the clubs financial needs. Additionally, the club had an ample supply of surplus military aircraft (T-34B's & T-41's) along with significant free parts support that allowed extremely low prices which covered all overhead.

Currently, the club has essentially depleted its supply of free parts support (especially engines and propellers) and is now faced with the dilemma of whether or not to keep one T-34B in compliance with an expensive Airworthiness Directive. Now more than ever, this club and other Navy Flying Clubs need objective strategic financial advice on what course of action to pursue.

The clubs current financial control measures are do not provide insight into the financial health of the organization. MWR provides financial statements but there is currently no analysis of what the reports are saying. The focus has been on short-term thinking. When the clubs see they have enough money for the next month or two, they cease evaluating their financial position. This has led to clubs disbanding in the worst case and aircraft that are otherwise airworthy being grounded due to insufficient funds to overhaul and engine or other maintenance troubles.

The club has been living in the short-term management mode for years and is still struggling to settle into its new business environment of fewer members and planes.

All Navy Flying Clubs need to start assessing their maintenance and aircraft replacement needs and budgeting accordingly. In the past when free planes and parts were the norm the lack of planning had no effect. Today the same method is being used and clubs have no plans to pay for replacement aircraft when the current aircraft become unserviceable.

Monterey Navy Flying Club's focus has remained short term throughout this turbulent period. They have data to analyze, but no method to do so. What is needed is to determine what financial measures can be used to provide an assessment of how the club is performing in the short, medium, and long run.

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I. INTRODUCTION

A. PURPOSE

The objective of the Navy Flying Club system is to provide an opportunity for members to develop skills in piloting, navigation, mechanics, and related aeronautics. [Ref. 1] In recent years, there has been a change in the number of clubs, government aircraft for use, and members.

Monterey Navy Flying Club has been using short-term planning to guide their decision process. There have been no cash shortages during the last thirteen years. [Ref. 2] In the past, free government aircraft were given to the Navy Flying Club program along with parts support that allowed competitive prices for members while still supporting the BUPERS Instruction 1710.22 requirements for insurance and management. Today, the government aircraft are nearly 50 years old (T-34B) and have an Airworthiness Directive (required modification) [Ref. 3] that must be complied with to keep them flying. [Ref. 4] The parts support no longer exists. Additionally, parts needed for the T-34B are no longer used in any active military aircraft.

It is much more difficult to survive in the current environment as the Department of Defense surplus aircraft become increasingly expensive for Monterey Navy Flying Club to keep airworthy. This thesis argues that it is now time to take a more all encompassing and sustainable approach to managing the Monterey Navy Flying Club.

B. RESEARCH OBJECTIVE

This research will evaluate the financial management, aircraft maintenance and usage, and pilot activity controls at Monterey Navy Flying Club. Research includes conducting an analysis of current practices, developing and identifying performance measures, and making recommendations on how to implement and use these performance measures.

The objective is to determine the performance measures that can be used to evaluate the club and how the club is performing financially.

C. RESEARCH QUESTIONS

Primary: What management control systems should Monterey Navy Flying Club use and what performance measures do they provide?

Secondary:

1. What management control systems exist at Monterey Navy Flying Club?
2. What are the performance measures at Monterey Navy Flying Club?
3. What do the current measures tell management?
4. Does the Monterey Navy Flying Club manage with a short, medium, or long-term focus?
5. Are there better performance measures?
6. How should the data be collected?
7. What is the data telling management?

D. SCOPE

This thesis examines the management control systems in use at Monterey Navy Flying Club and the data these systems produce. This information is then examined to determine and develop performance measures for Monterey Navy Flying Club to use as a basis of self-examination.

The scope is limited to management control systems and performance measures that contribute to assessing the financial and strategic direction of the Monterey Navy Flying Club. Areas of interest are financial condition, aircraft maintenance and usage, and pilot activity levels.

This thesis is intended to be applicable to all Navy Flying Clubs, but it will focus on the Monterey Navy Flying Club.

E. METHODOLOGY

Management control systems are described and analyzed with the purpose of deriving performance measures. The performance measures are intended to provide a basis for evaluation of Monterey Navy Flying Club to assess its financial sustainability.

The management control systems in use were identified by individual interviews with the various personnel involved in operating the Monterey Navy Flying Club. These interviewees included the club manager, mechanic, board of directors, and Morale, Welfare, and Recreation Leisure Services Manager.

In addition to interviews, the BUPERS Instruction 1710.22 which guides the operation of Navy Flying Clubs was used. This instruction provides the headquarters guidance on specific requirements for individual clubs.

F. BENEFITS OF STUDY

The results of this thesis provide a model for measuring the financial and business performance of the Monterey Navy Flying Club. The benefit is that the club can use these measures to identify areas that need improvement so action can be taken now to prevent a simple business problem from becoming more threatening to the club.

G. ORGANIZATION OF STUDY

Chapter I introduces and outlines the study. Chapter II presents an overview of Monterey Navy Flying Club and the environment in which it operates. Chapter III describes the various management control systems of interest that are used by Monterey Navy Flying Club. Chapter IV provides an analysis of the management control systems in use. Chapter V is an analysis of performance measures in the three main areas of interest. Chapter VI contains conclusions and recommendations drawn from the analysis of management control systems and performance measures. The conclusions and recommendations provide the basis for Monterey Navy Flying Club to objectively analyze itself and make any necessary changes to assure its long-term survival.

II. OVERVIEW OF MONTEREY NAVY FLYING CLUB

A. HISTORY

Since its inception in 1963 the Monterey Navy Flying Club has been administered by the Naval Postgraduate School. The club grew to approximately 350 members with 16 club aircraft and 600 to 800 flight hours per month in 1992. [Ref. 2] At that time, the club had a manager, assistant manager, and two full time Airframe and Powerplant mechanics. [Ref. 2]

The closure of Fort Ord in 1993 [Ref. 5] had a major impact on the club. Since the closure, the club has shrunk to 140 members, five aircraft, and an average of 200 flight hours per month. Current staff consists of the manager and one mechanic. [Ref. 2]

Starting in Fiscal Year 2000, the financial functions were consolidated under NPS Morale, Welfare and Recreation (MWR) in the Base Level Accounting System. Prior to this Monterey Navy Flying Club performed its own accounting, ordering, budgeting, and management according to BUPERS Instruction 1710.22 and policies of the Naval Postgraduate School MWR department. The intent of the consolidation was to relieve the club manager from accounting duties and allow the individual more time to perform managerial duties. [Ref. 6] This change was directed by the Navy Flying Club Program headquarters.

As a consequence of the change, Monterey Navy Flying Club must now use MWR purchasing procedures which are relatively slow and cumbersome compared to those the club used when it performed its own purchasing. These MWR

procedures detract from the original goal of providing the manager with more time. [Ref. 6] A second goal of this change in accounting responsibility was to allow the club to make use of the MWR Business Manager's expertise. [Ref. 6] The Naval Postgraduate School MWR has left the Business Manager position unfilled for the last two years. [Ref. 2] Additionally, the MWR accounting staff has minimal expertise in aircraft and flying clubs, which does not make them well suited to providing business advice to Monterey Navy Flying Club. [Ref. 7]

The advice was intended to help the manager and Board of Directors understand the business aspects of club operations. This includes helping the Board of Directors articulate plans and the strategic direction of the club. [Ref 6] Once the strategy is decided, the business manager could help the Board develop a plan to implement the strategy. [Ref. 7]

B. CURRENT SITUATION

Monterey Navy Flying Club is located at Monterey Airport. This airport is a civilian airport and the club must pay rent for the clubhouse, hangar, and fuel tank, and ramp space for its aircraft. The club leases the land but has purchased the hangar, clubhouse, and fuel farm. The hangar and fuel tank are not moveable. If the club were to move operations to another airport the investment in the hangar and fuel tank would be surrendered to the Monterey Peninsula Airport District. [Ref. 2]

The club currently operates five aircraft. These include two Cessna 152 two-seat trainer aircraft and two

Cessna 172 four-seat aircraft along with one Beech T-34B Mentor. The T-34B is a two-seat tandem military training aircraft that the U.S. Navy owns and allows the club to operate for the benefit of its members. The T-34B is the centerpiece of the Navy Flying Club program. Many members join the club solely to fly the T-34B. [Ref. 2]

Monterey Navy Flying Club also has several other Navy-owned aircraft and one former Army-owned aircraft that are not currently being operated. Navy-owned aircraft include one Beech Baron twin with over 16,000 hours on its airframe and five complete T-34B Mentors and parts for a sixth T-34B. One of the T-34B's sustained a gear up landing after a generator failure and another one sustained a nose gear collapse after going off the end of the runway. The remaining T-34B's have maintenance problems that the club can not afford to fix. [Ref. 4]

The former Army aircraft is a T-41B (military version of a Cessna 172). This aircraft is currently down because its engine, propeller, and governor are due for overhaul. The aircraft was not flying enough hours per month to cover its own costs so when the engine achieved the overhaul period it was grounded. [Ref. 4]

1. Short Term Focus

Monterey Navy Flying Club has evolved from having a large membership and free airworthy government aircraft to a small membership and government aircraft that require major maintenance to maintain airworthiness. [Ref. 4] Large membership gave the club a fixed monthly income from dues that covered club overhead. The aircraft did not need

to cover any club overhead, which allowed low rental rates to members. Long-term planning was ignored because cash flow exceeded requirements. No significant effort to measure performance was made because excess cash was available. For example, the hangar and fuel tank were paid for with cash. No plans to raise capital for these two structures was ever instituted prior to their purchase. [Ref. 2]

The current board of directors is only concerned with the current state of the club. They have not borrowed money from the restricted cash account to cover normal operating expenses such as fuel, but they do not distinguish between restricted cash and unrestricted cash when evaluating the financial resources of the club. [Ref. 2]

2. Cash Reserve

MWR produces financial statements on a monthly basis. The club has a restricted cash account that is used to set aside money for major expenses. The most common use for restricted cash is for engine overhauls. [Ref. 1] Aircraft engines have a specified Time Between Overhaul limit specified by the manufacturer. BUPERS Instruction 1710.22 requires compliance with manufacturer set engine overhaul hour limit by Navy Flying Clubs.

A factory re-manufactured engine can cost over half the market value of the aircraft as shown in Table 2.1. This expense ranges from \$15,000 to \$25,000 for Monterey Navy Flying Club aircraft as shown in Table 2.1. Since the club is not allowed to fly past the manufacturer specified

overhaul hour limits of the engine, it is important that money be available when the overhaul is due. Monterey Navy Flying Club currently has its aircraft on a cycle that makes the overhauls of all its aircraft due within a year. [Ref. 2]

Aircraft	Type	Insured Value	Engine Model	Overhaul Cost
N68282	Cessna 152	\$23,000	Lycoming O-235	\$15,000
N5177B	Cessna 152	\$23,000	Lycoming O-235	\$15,000
N7817G	Cessna 172	\$30,000	Lycoming O-320	\$15,000
N84604	Cessna 172	\$30,000	Lycoming O-320	\$15,000
T-41B	T-41B	N/A	Continental IO-360	\$25,000
T-34B	T-34B	N/A	Continental IO-470	\$25,000

Source: Monterey Navy Flying Club Mechanic [Ref 4]

Table 2.1 - Engine Types and Overhaul Price by Aircraft

3. Overhead

BUPERS Instruction 1710.22 creates several requirements for the club. The major requirement is that each club must have a manager. For a smaller club such as Monterey Navy Flying Club this expense is over one third of the fixed monthly club overhead expenses as shown in Table 2.2.

Expense	Monthly Amount
Managers Salary	\$2,338
Mechanic Wages	\$2,000
Rent	\$1,400
Utilities	\$400

Source: Monterey Navy Flying
Club Manager [Ref 2]

Table 2.2 - Monthly Overhead Expenses

The other major fixed expense is that BUPERS 1710.22 requires is that all clubs use the Navy Flying Club program insurance. The NFC program carried a \$25 Million policy. [Ref. 1] When the contract was bid in Fiscal Year 2002 there were only three aviation insurance companies that were capable of providing that amount of insurance and none of the companies wanted to write a policy for the Navy Flying Club program. [Ref. 2] The result is that the clubs have an expensive monthly insurance bill to pay as shown in Table 2.3.

The club also must carry hull insurance on club-owned aircraft, but not government-owned aircraft. [Ref. 1] This allows government aircraft to be less expensive to insure than club owned aircraft.

Liability insurance is paid by the seat therefore, the four-seat Cessna 172 costs twice as much as the two-seat Cessna 152. No distinction is made concerning the make and model of aircraft being operated. [Ref. 2] This is

analogous to paying for automobile liability insurance by the number of doors instead of the make and model. An unusual effect of this by-the-seat premium policy is that the high-performance, complex T-34B aircraft costs less to insure than any other aircraft the club operates.

Aircraft	Type	Liability Premium	Hull Premium	Total Premium
N68282	Cessna 152	\$212.88	\$128.55	\$341.43
N5177B	Cessna 152	\$212.88	\$130.64	\$343.52
N7817G	Cessna 172	\$425.75	\$180.53	\$606.28
N84604	Cessna 172	\$425.75	\$175.78	\$601.53
N341MN	T-34B	\$212.88	\$0.00	\$212.88

Source: Monterey Navy Flying Club Manager [Ref.2]

Table 2.3 - November 2002 Insurance Bill

C. FUTURE NEEDS

The club's current financial condition does not provide sufficient resources for future aircraft acquisitions. [Ref. 2] BUPERS Instruction 1710 states that individual clubs must have an aircraft acquisition plan, but provides no guidance for how much money should be saved and the timeframes for the savings. The plan could be as simple as the club stating that they will execute leasebacks for additional aircraft needs. The lack of budgeting for aircraft replacement has lead to no money being put aside for this purpose. [Ref. 2] The instruction

imposes restrictions on investing or borrowing funds for aircraft acquisitions. [Ref. 1]

By not saving for replacement aircraft the club is limiting its ability to sustain operations when the current inventory of aircraft is no longer serviceable. The T-34B Airworthiness Directive is a good example of how the club lacks the funds to complete an Alternative Means of Compliance to return the aircraft to service even though the club has operated T-34B's for many years. The Board of Directors has not considered any plans for aircraft acquisitions. [Ref. 2] This is evidenced by the fact that the club does not have an aircraft replacement plan as required by BUPERS 1710.22. [Ref. 2]

III. CONTROL SYSTEMS

A. MANAGEMENT CONTROL SYSTEMS

1. Board of Directors

The Board of Directors provides the strategic direction and policy making for the club on behalf of the Naval Postgraduate School Superintendent. [Ref. 1] The board must meet a minimum of once per quarter but currently meets once a month. The board consists of a President, Vice President, Operations Officer, Maintenance Officer, Public Affairs/Membership Officer, Safety Officer, Secretary, Member-at-Large, Treasurer/Fiscal Analyst, and Chief Flight Instructor. [Ref. 1]

The Board discusses aircraft status, financial status, aircraft acquisitions, and any other policy decisions affecting the club. [Ref. 2] The ultimate responsibility for club operation resides with the Naval Postgraduate School Superintendent, but the Board acts to assist the Superintendent in his oversight of the operation of the club. [Ref. 1]

2. Managerial Duties

Monterey Navy Flying Club is required to have a club manager. [Ref. 1] The manager has a myriad of responsibilities such as 1) maintaining the flight schedule, Pilot Information Files, membership and training folders, safety and annual currency records, 2) reporting of any accidents or unusual occurrences, 3) stock control of equipment and supplies, 4) monitoring performance of contractors, aircraft qualification management, 5)

instructor and membership management, 6) financial management, 7) policy implementation and review with the assistance of the Board, 8) and procurement of equipment and supplies according to MWR purchasing procedures. [Ref. 1]

The manager runs the day-to-day operations of the club. She has the assistance of the various members of the Board and club membership at large. [Ref. 1] Due to the diverse range and volume of tasks she is confronted with on a daily basis, asking for and receiving assistance from the Board of Directors and club members in performing these duties is very helpful to her. [Ref. 2]

Organization and standardization is key to the smooth operation of the club [Ref 1]. For instance, if the manager has to track down pilots and instructors that fail to properly complete their paperwork, it detracts from the manager's ability to accomplish her duties on time.

B. FINANCIAL CONTROL SYSTEMS

BUPERS Instruction 1710.22 provides detailed requirements of how the Monterey Navy Flying Club should operate financially. [Ref. 1] The instruction leaves the implementation of these guidelines up to the club. The financial control systems described here are the means by which Monterey Navy Flying Club meets these requirements.

1. Budgeting

In Fiscal Year 2000 the Monterey Navy Flying Club was brought under the Naval Postgraduate School MWR for accounting purposes. Prior to this the club was a stand-alone entity for accounting purposes. They performed their own accounting and budgeting and reported to the Navy Flying Club program manager. [Ref. 2]

Currently, the manager works with the club treasurer to prepare an annual budget according to the MWR format as detailed in BUPERS Instruction 1710.22. The budget is not combined with the local MWR budget when the overall MWR budget is submitted to MWR headquarters. The Monterey Navy Flying Club budget is submitted separately to the flying club program sponsor at MWR headquarters. [Ref. 1]

BUPER 1710.22 states that "Budgeting consists of establishing specific future goals and periodically measuring results of those goals." [Ref. 1, Paragraph 702 b] It goes on to state that the budget should address cash, operations and capital requirements. The current MWR budget is a compilation of expected revenues and expenses. After it is submitted to MWR, it is not used for managerial purposes. The only time it is used again is for the next years' budget submission to see what was done the previous year. [Ref. 2]

2. Restricted Cash

The intent of the restricted cash account is to save money for major, infrequent purchases. [Ref. 1] The most common use is to save funds for engine overhauls when Time Between Overhaul is reached. Up until last year, the

manager allocated \$7.50 per flying hour to restricted cash for overhauls. This amount was enough to cover engine replacements but not sufficient to cover other overhaul items like radios, propellers, propeller governors, and airframe replacement parts such as windshields and interiors. Manually calculating the amounts to be transferred each month and then communicating this information to MWR was time consuming for the manager. [Ref. 2]

Currently, the manager has changed this monthly transfer to a fixed amount of \$1,500 per month. This amount will be reviewed on an annual basis to make sure the amount will cover expected expenses. [Ref. 2] To date the amount of funds in restricted cash are accumulating at a sufficient rate to cover the engine overhauls along with other upgrades such as new navigation/communication radios, Global Position System, and new interiors. This assumes that the Board of Directors does not use the restricted cash to fund other requirements such as the T-34B Airworthiness Directive. [Ref. 2]

3. Investment

Investing is not expressly forbidden by BUPERS 1710.22, but the conditions under which investing is allowed is restricted. Only when cash accumulated for programmed purposes is in excess of immediate requirements can funds be invested. [Ref. 1]

Monterey Navy Flying Club does not have excess cash to invest. The most likely reason the club would have to invest funds is for aircraft replacement. As an example,

the T-34B is nearly fifty years old and the club Cessna 172's are over thirty years old. [Ref. 4]

4. Billing of Members

The billing of flight time is performed by the manager. Each pilot writes down the date, his or her name, instructor name if any, tachometer hours, total tachometer hours, Hobbs meter hours, Hobbs total hours, fuel and oil used, and the cost of the flight in the aircraft book. The manager then takes this information and inputs the cost data into QuickBooks Pro to keep track of individual members bills. [Ref. 2]

If pilots pay by check they are expected to do so after each flight. Members paying by credit card check the credit card box on the aircraft book and then the manager totals the charges and runs the credit card charge. The club is charged the government rate of one and a half percent by the credit card company as the transaction fee. While this is an expense to the club, it has proved to take much less of the managers time to perform the required bookkeeping and has actually saved the club money in the long run through the more efficient use of the managers time. [Ref. 2]

5. Payment of Invoices

Vendors bill the club for products and services provided. The manager matches the invoices and purchase requests and submits the documents to MWR for payment. She also submits documents to MWR to pay employees and

contractors. The amounts are currently drawn from the Quick Books Pro entries or added up manually. [Ref. 2]

Now that all purchases are made through MWR, the manager must follow up with MWR accounting to verify that checks are going out on time. She must also reconcile the bank statements monthly to verify amounts and that the checks have been cashed by the vendors. [Ref. 2]

C. AIRCRAFT USAGE

As noted above the manager prepares a monthly report detailing the revenue and expenses from each aircraft. This shows a net profit/loss by aircraft. She passes this report to MWR accounting so the fuel and oil costs can be input into the Base Level Accounting System. No one except for MWR accounting and the current club treasurer has asked to see this information in the last thirteen years. [Ref. 2]

The monthly aircraft report does not distribute club overhead. It shows that the aircraft are covering their own expenses, but ignores the \$6000 per month in overhead shown in Table 3.1. [Ref. 2] Taken alone the monthly aircraft report presents a picture of profit when in fact no profit exists.

Expense	Monthly Amount
Managers Salary	\$2,338
Mechanic Wages	\$2,000
Rent	\$1,400
Utilities	\$400

Source: Monterey Navy Flying Club Manager

Table 3.1 - Monthly Overhead Expenses

BUPERS 1710.22 does give guidance on the ideal number of hours per month per aircraft. The recommended amount is 35 to 40 revenue flight hours per month. Any more than this is difficult to achieve due to required maintenance and inspections. [Ref. 1] The club treasurer has also determined that for Monterey Navy Flying Club nearly twenty flight-hours per aircraft are necessary each month to cover all costs excluding overhead as shown in Table 3.2. The club is making this goal on all aircraft. [Ref. 2]

Aircraft	Required Hours	Actual Hours
N68282	14.2	38.5
N5177B	3.4	60.4
N7817G	15.2	37.1
N84604	16.4	20.2
N341MN	5.8	18.6

Source: Monterey Navy Flying Club Manager

Table 3.2 - Required Hours and Average Actual Hours

Club history has shown that the club needs an average of 200 flight hours per month to break even including overhead. This is the level of activity the club has experienced the last three years. [Ref. 2]

D. PILOT ACTIVITY

The primary control system in place governing pilot activity is the Clearing Authorities. Prior to each flight the Clearing Authority must sign the flight plan before the pilot can depart. The purposes for the Clearing Authority are to verify that the pilot: is not on the grounded list for any reason, is checked out in that aircraft, is current in that aircraft, and has filed any covenant-not-to-sue forms for any passengers that are not club members. The completed flight plans are audited for completeness and kept on file for three months. [Ref. 2]

The grounded list is to let members and Clearing Authorities know which members have discrepancies that must be corrected prior to further flight. Members could be placed on the grounded list for such issues as needing a medical, annual standardization flight, or not attending the last safety meeting. [Ref. 2]

The club currently does not make any attempt to track pilot activity in the form of how many hours a month each pilot flies. The only measure in use is the monthly aircraft report that shows such items as how many hours each aircraft flew, parts and maintenance cost, fuel cost, insurance cost, revenue, and profit or loss. [Ref. 2]

Within the next year Monterey Navy Flying Club is expecting to implement an internet-based scheduling system that has been developed by the North Island Navy Flying Club. This system will allow pilots to schedule aircraft and check the schedule and aircraft status online. The system will also serve as a Clearing Authority by maintaining a database of when the pilot has flown, expiration dates of medicals, annual check flights, and other control dates. This system has the potential to provide pilot activity statistics that could be used to determine if the club has the right number and mix of aircraft. [Ref. 2]

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IV. ANALYSIS OF CONTROL SYSTEMS

Before performance measurement tools can be developed Monterey Navy Flying Club must "analyze and understand (1) the competitive market dynamics in their industry and (2) their firm's resources and capabilities." [Ref. 8, pg. 18] For the club this means they must understand their customers' needs and desires as well as resources available to them through the Morale, Welfare, and Recreation department and individual members professional skills.

The method used to evaluate Monterey Navy Flying Clubs control systems is a SWOT (Strength, Weaknesses, Opportunities, and Threats) analysis. The strengths and weaknesses are related to the external opportunities and threats that the club faces in its market niche.

A. MANAGEMENT CONTROL SYSTEMS

1. Board of Directors

The strength of the Board of Directors is that they are active members and have a vested interest in the success of the club. They can use their collective experience to ensure that the club is acting in a responsible manner.

The weakness of the Board of Directors is that as members and pilots they have incentives to keep costs as low as possible since they are also customers. If the board chooses to focus on short-term concerns, there appears to be no check to make sure that future problems are being addressed.

The board has the opportunity to discuss future concerns. By studying issues impacting the club to get an understanding of the full cost of running the club, they put themselves in a favorable position to evaluate and take action to ensure the long-term stability of the club.

A threat to the board membership is the fact that they are all volunteers. They receive no compensation for performing these duties. Recent club history has shown that the same people get re-elected annually to fill positions on the board. [Ref. 2] The past president served in that capacity for five years and the Secretary has served in that position for four years. [Ref. 2] This can lead to burnout on the part of board members.

2. Managerial Duties

The strength of the manager is that she has the detailed knowledge of Monterey Navy Flying Club's operations. She is the one person who has the visibility to see how the entire organization works. This allows her to put issues into perspective for the Board of Directors and the general membership.

The weakness of the manager is that she is involved in every activity of the club. This is by necessity and in compliance with BUPERS 1710.22. This makes it difficult to focus on one task at a time because she is routinely interrupted by her other duties. [Ref. 2] This results in lower productivity.

The processes she uses in the execution of her duties are manual. [Ref. 2] There is an opportunity for effective computerization of selected routine tasks to reduce total

time spent on those tasks. This would allow her more time to ensure all tasks are completed properly and on time. She could spend more time investigating future problems and finding solutions for them instead of being reactive.

The threat is that the manager cannot focus on long-term concerns since she is responsible for day-to-day operations of the club. The Board of Directors is responsible for long-term vision but if they fail in this responsibility, the manager cannot provide the necessary support.

B. FINANCIAL CONTROL SYSTEMS

The Navy Flying Club program headquarters relies on the local MWR business office to provide the business guidance for each flying club. [Ref. 1] The implied assumption is that the business office has the expertise to counsel the flying club. At the Naval Postgraduate School the business office does not have adequate personnel to provide this service nor do they have the expertise in flying clubs. [Ref. 7]

1. Budgeting

The strength of budgeting process is that it is required annually and it is reviewed by the local MWR as well as the Navy Flying Club program headquarters.

One weakness is that the budget focuses only on events that are expected to occur within the Fiscal Year. The Fiscal Year 2003 budget narrative discussed events completed or on going projects but not future needs. [Ref. 2] Another weakness is that the club has expenses whose

occurrences are more than one year apart. In years when these expenses are not incurred, the budget shows a higher profit level and a lower profit or loss when the expenses are incurred.

The club has the opportunity to use the budgeting process to take future costs into account. If the budget were multi-year, it would eliminate the fluctuation caused by the expenses that occur more than one year apart. Another option would be to examine the cash flows into and out of the restricted cash account. A balance in restricted cash projected to stay above zero would indicate that infrequent expenses are being adequately addressed.

The use of the current budget by the Monterey Navy Flying Club is a threat to the club. The approved budgets are not used for comparison against the actual operations for that year. By not comparing the predicted results versus actual, the club cannot be certain that it has realistic assumptions about its operations.

2. Restricted Cash

The strength of the restricted cash account is that it is a good method to save for recurring major expenses such as engine overhauls and replacement of avionics. Since the rate for engine overhauls can be predicted, this programmed saving works well to ensure the funds are available when needed.

There are two weaknesses to the restricted cash account. The first is that the manager and club treasurer are the only two people currently watching the levels of funds on a regular basis. The balance and rate at which

funds enter the account have a major impact on the ability of the club to sustain operations. If insufficient funds are available when overhaul or replacement is required, the club will not be able to sustain that aircraft as part of club operations.

The second weakness is that since the level of funds grows on a monthly basis without withdrawals, it appears to be a source of funds for other than the planned purpose. The restricted cash is separated from unrestricted cash only in the accounting records. The funds are actually co-mingled in a single account with the unrestricted cash. [Ref. 2]

There is an opportunity to correct the second weakness if the restricted funds were kept in a separate account. This would prevent the appearance of more funds in unrestricted cash than actual. The club could also perform a cash flow study by comparing the amount of funds in restricted cash, the rate of deposit, and the expected withdrawal dates and amounts. This could alert the manager and Board of Directors if there is a projected deficit in the future.

The co-mingling of the restricted and un-restricted cash is a threat to the financial resources. To a person unaware of the distinction, the un-restricted cash balance in the club bank account appears larger than it actually is. If a decision was made based on the assumption that the balance in the account is all un-restricted cash, the club would risk the loss of the restricted cash.

3. Investment

The strength of investing is that the club would benefit from any interest earned. This would reduce the cost members would pay for the clubs services. Investing could also provide a financial resource to use when unexpected expenses arise.

The major weakness is that it is difficult to invest under current guidelines. However it is not expressly forbidden for the club to invest funds that are not needed for immediate needs. [Ref. 1] The club still maintains its funds in a non-interest bearing account. There is at least \$30,000 or more in the account at any given time. [Ref. 2]

Investing is an opportunity for Monterey Navy Flying Club to plan and save for new aircraft. Despite the failure of the club to invest in the past, this has had little effect in the short run. However, in the long run not investing could contribute to the club being unable to buy new aircraft when its older aircraft become uneconomical to maintain and operate.

One possible threat of not investing is that the club will be unable to afford to keep its aircraft airworthy. There will not be sufficient funds to buy replacement aircraft. If this were to happen, the club would have to either shut down or pursue aircraft by leaseback. Leasing aircraft would increase cost to members because the restrictions on engine overhauls and club insurance remain the same but the aircraft owner would have to be paid for the use of the aircraft. The club would have to pay the aircraft owner an acceptable profit. The club would also run the risk of losing the aircraft at any time the owner

was not satisfied with the return on the investment. [Ref. 9]

Another threat is the risk of loss of the invested funds. This threat could be reduced to acceptable levels by using only government insured investments. The amount of interest earned by investments would have to be monitored to insure that the club is saving enough funds at the current interest rate to achieve its investment goals.

4. Billing of Members

The strength of the billing system is that members are billed only when they use club aircraft or purchase supplies from the club. Members have the flexibility to pay by check each time they fly or to bill it to their credit cards. This policy eliminates the need to account for pre-paid items.

The weakness of this system is that members must pay each time they fly or buy supplies from the club. Credit card numbers must be kept on file with this system. [Ref. 2] If the office is open and the member has their credit card with them the manager can swipe the card through the credit card reader and process the transaction on the spot. If the manager is not present or the member does not have their credit card available the manager must physically type in the credit card number on the reader for each transaction. The manager must also write out a receipt for each transaction. This is a time consuming operation.

Monterey Navy Flying Club is currently not allowed to let members pre-pay for block flight time. [Ref. 1] This opportunity would be attractive to members so they would

not have to write a check or their credit card number on a receipt each time they fly. It is customary in aviation that block time carries a small discount to the customer. The pre-paid funds could be invested to earn interest to at least partially offset the loss in revenue. The club could offer block time rates if granted a waiver by the Navy Flying Club program manager at MWR headquarters.

The threat of the current billing system is that members paying by credit card may be over their credit limit. In this case the club would not get paid and would have to pursue the member for the bill. Members paying by check could be overdrawn on their checking account which would result in the club not getting paid and possibly incurring bank charges. This is not currently a problem for Monterey Navy Flying Club and is not expected to be in the foreseeable future.

5. Payment of Invoices

The strength of the current invoice payment system is that it is a formal system maintained by professional accountants. By having a formal system, there are checks and balances to ensure that there is little chance for fraud or abuse.

The weakness of the system is the burdensome procedures the manager must use for each purchase. This requires constant attention by the manager to ensure that all active purchase requests are being ordered, received, invoiced, and paid on time.

The club has the opportunity to earn interest by not paying its bills until a few days prior to the due date.

This would allow the club to earn interest if its funds were in an interest bearing account.

The problem is that the accounting function is understaffed. [Ref. 2] This threatens the checks and balances in the system and can present problems with timeliness of payments to vendors. This has happened twice in the last two months. [Ref. 2]

C. AIRCRAFT USAGE

The strength of the aircraft usage system is that the aircraft books show each pilot the last two or three months of post flight pilot reports on the aircraft and its components. [Ref. 2] The reported squawks and maintenance action along with the Hobbs meter settings are shown. The Hobbs meter readings ensure that missing entries (effectively theft of flight time) will get discovered quickly.

The weakness of the flight history system is that it is paper based. If a page is missing in the aircraft book the flight history will not be available to the next pilot. This could lead to an unreported discrepancy not being discovered until the next pilot has taken off. If the discrepancy is a critical item for that flight this is a safety problem. If the next pilot does discover the discrepancy in the preflight checklist the pilot will not be able to fly that aircraft and has lost time discovering what was not able to be read in the aircraft book.

The weakness of the schedule is that it also is paper-based. It is maintained at the club so members must call in or drive in to schedule an aircraft. If the office is

not open, such as on a weekend, the members' only option is to drive in to check the schedule or simply not fly. Since most pilots do their flying on the weekend this inconvenience can lead to lost revenue flight hours. Another associated weakness is that a Clearing Authority must be present to sign the flight plan or the pilot must come in to the club when the office is open to get a flight plan signed in advance by a Clearing Authority.

Monterey Navy Flying Club has the opportunity to move the aircraft schedule to an online version. This could save money and increase revenue in several ways. Going online would negate the need for the weekend duty person to staff the office and manage the schedule. The club currently pays the \$23 monthly dues for members who volunteer to staff the office on weekends. This revenue could offset the cost of operating an online scheduling system.

An online schedule would also improve the aircraft usage because the membership would have greater opportunity to schedule an aircraft and be cleared for the flight regardless of whether the office was open or closed. This is an area where the club is currently losing out on flight hours. Since there is currently no obvious way to assess how large this loss is the effect is unknown.

An online schedule would help the manager by greatly reducing the number of phone calls she would have to answer on a daily basis. Interruptions affect productivity negatively.

The larger threat of the scheduling and flight history systems is that without a change in procedure the club will

continue to lose flight hours and managerial time. This loss will prevent the club from getting more utilization from its current inventory of aircraft. A less significant threat is that if the online system is implemented, the computer system could go down for periods of time and the system would be unavailable to all members.

D. PILOT ACTIVITY

The current pilot activity control systems strength is that it is simple to use. It is paper based and the requirements are clearly written on the flight plan form. If the pilot has flown with the clearing authority previously the process is quick due to the familiarity between pilot and Clearing Authority.

One weakness of this system is that if a Clearing Authority has not flown with the pilot previously, the Clearing Authority must look up information and verify the pilot's credentials. This takes time and if the office is not open, it may not be possible for the Clearing Authority to check the pilot's file.

Another weakness is that the credentials the Clearing Authority is checking are time sensitive. A Clearing Authority could mistakenly clear a pilots flight when a qualification such as Biennial Flight Review or medical certificate recently expired.

The current control system for pilot activity does not make any attempt to track how often a pilot flies. This information could be useful in determining who flies which aircraft and how often they do so. Such information would be valuable to the Board of Directors in any decisions

concerning how often each aircraft is used and by whom. If only a few pilots are actively using a certain aircraft and those members leave, the club would suddenly find itself with an aircraft its members do not want and without a plan on how to deal with this situation.

An opportunity exists through the online scheduling system to perform clearing authority duties. The system would automatically check all the required qualifications. Pilots could not only schedule an aircraft on short notice but also be cleared for the flight even if the office is not open.

The current system's threat to the club is that since it is paper based it does not quickly reflect updates to pilot qualifications.

An additional threat concerns the signed flight plans. They are currently kept on file for a period of three months. [Ref. 2] The forms are not examined to verify that an error has occurred. It is possible that errors are remaining undetected. If a mishap occurred and the flight plan was signed but the pilot was not qualified, this information would be revealed in the investigation into the mishap. This could create a negative image for the Monterey Navy Flying Club's management and members. The negative image could influence prospective members from joining. Repeated offenses could lead to the Naval Postgraduate School shutting down the club.

V. PERFORMANCE MEASURES

This chapter applies the framework described in Euske et al. for service organizations. Monterey Navy Flying Club is a service organization. To develop performance measures, the framework in Euske et al. provides some useful tools. This chapter applies these tools to Monterey Navy Flying Club.

A. IDENTIFY PROCESSES AND SUB-PROCESSES

To use the tools in Euske et al. the major processes and sub-processes must be related to the services provided. Six major processes were identified at the Monterey Navy Flying Club: 1) Renting aircraft, 2) maintaining aircraft, 3) providing ground and flight instruction, 4) refueling aircraft, 5) providing clubhouse services, and 6) providing pilot supplies.

The first process is renting aircraft. This is key to the club's operation because most members do not own personal aircraft. There are three sub-processes that comprise renting aircraft: 1) acquiring aircraft, 2) scheduling aircraft, and 3) managing aircraft. The aircraft require capital to acquire and operate. The flexibility in scheduling the aircraft is important to members. If the aircraft are not available when the pilot wishes to fly, the pilot may take his or her business elsewhere. Managing the aircraft involves identifying equipment upgrades desired by members. The aircraft available for rent may be compared by members to other aircraft available for rent elsewhere, so the quality is a

factor in the pilot choosing which aircraft to fly. The aircraft utilization is also a part of managing the aircraft to ensure that each aircraft is sufficiently used by the membership.

The second process is maintaining aircraft. The two sub-processes associated with the maintaining aircraft are routine maintenance and overhauls. Routine maintenance involves scheduling and conducting the 25, 50, 100-hour, and annual inspections for all the aircraft. The quality and timing of this routine maintenance impacts the usage and desirability of the aircraft to the club membership. Overhaul time limits must be monitored by the manager to ensure that 1) the limits are not exceeded and 2) that the club has sufficient restricted cash to pay for the overhaul when needed.

The third process is offering ground and flight instruction. The quality of the instructors and flexibility in their availability affects the members perception of the quality of instruction being received. If the pilot is having difficulty learning from a particular instructor, the pilot may get frustrated and quit.

The fourth process is refueling aircraft. The fuel used in club aircraft and sold to members with their own aircraft must be a quality product free from contamination. Aircraft cannot pull to the side of the road if contaminants cause the engine to stutter or stop. The fuel tank must be maintained to ensure the fuel is not contaminated. The manager must ensure that fuel is always

available and the price for member-owned aircraft is greater than the cost to the club.

The fifth process is providing clubhouse services. The most important service provided to members is access to weather briefings. Weather briefings can be obtained from flight service by phone or by computer. Both methods are provided by the club. A restroom, lounge, flight planning area, and snacks are available to members at the clubhouse. The facilities are fixed and cannot be changed to suit each individual pilot.

The sixth process is providing pilot supplies. Members can order special items if they are available in one of the catalogs the club has available. This provides flexibility in providing equipment and supplies to suit each member.

B. SERVICE TYPES AND CLASSIFICATION DIMENSIONS

Fitzgerald et al. identifies:

three different generic service types: professional services, service shops, and mass services. [Ref 12, pg. 9]

Professional services require high levels of personal contact where the customers spend considerable time in the service process. [Ref. 10, pg. 17] An example of this is a consulting firm. [Ref. 10] Fitzgerald et al. describe mass services as:

Mass services have many customer transactions, involving limited contact time and little customization. [Ref. 12, pg. 11]

Railroads, airlines, and hotels are characteristic of mass service [Ref 10]. Service shops such as Monterey Navy Flying Club are between these two extremes. Examples of service shops include most retail shops, wholesale, and restaurants. [Ref. 10]

The service types are:

differentiated in terms of the volume of customers processed by a typical unit per day against six other classification dimensions [Ref 10, pg.18].

The classification dimensions and where Monterey Navy Flying falls in the spectrum are listed in Table 5.1. Examining a service organization and classifying where a particular organization falls within the continuum can help the organization to recognize commonalities with other organizations. [Ref. 10]

Monterey Navy Flying Club most closely resembles a service shop given its relationship between equipment and people focus. The renting aircraft processes focuses on equipment, but instruction and clubhouse processes are focused on personal interactions between the front office staff and members.

The services provided to members are focused on products. The products in Monterey Navy Flying Club's case are renting aircraft, instruction, training supplies, and providing fuel. Renting aircraft and instruction result in logbook entries for pilots that are necessary to exercise the privileges of being a Pilot in Command. Training supplies and providing fuel are necessary for flight training and aircraft rental.

A considerable amount of customization is available. For instance, the member may choose which particular aircraft he or she wants to fly given they are properly checked out in that aircraft. A pilot can choose which instructor the pilot wishes to fly with and what maneuvers to practice. The instructor will tailor recommendations based on the pilot's skill level.

The office staff (manager, mechanic, and flight instructors) have significant latitude in the customization of services to each pilot. This is especially true for the flight instructors. The manager she has some latitude in customizing services. This latitude is bounded by BUPERS 1710.22 and the club Standard Operating Procedures.

The contact time between the office staff and the pilot is considerable. The flight instructors have the most contact time with pilots. For the flight instructors the contact time is usually longer than the actual flight due to pre-flight briefings with the pilot and post-flight debriefings.

Classification Dimension	Mass Service	Service Shop	Professional Service	Classification Dimension
Equipment Focus		●		People Focus
Product Focus		●		Process Focus
Low Customization of Service to any One Customer			●	High Customization of Service to any One Customer
Minimal Discretion available to front office staff		●		Minimal Discretion available to front office staff
Minimal Contact time available by front office staff			●	Considerable Contact time available by front office staff

Table 5.1 - CAM-I Service Classification Grid for Monterey
Navy Flying Club

C. DIMENSIONS OF PERFORMANCE

When developing a measurement system "the goal is to create a set of measures that link activities to the service process [Ref 13, pg. 21]." The six dimensions of performance applicable to any of the service types are: (1) Competitiveness, (2) Financial Performance, (3) Quality of service, (4) Flexibility, (5) Resource Utilization, (6) Innovation [Ref 12]. Using all the dimensions provides a balanced view of the organization [Ref 10].

D. PERFORMANCE MEASUREMENT

Selecting appropriate process measures can be difficult due to process complexity, number of items to measure, difficulty gathering information, or the segregation qualities within the process [Ref 10].

After using the Service Classification Grid (Table 5.1), identifying the processes and sub-processes, and the dimensions of performance, we can begin to determine appropriate process-level performance measures. [Ref 10] By using the questions in Appendix C we can develop measures. The resultant measures and their rationale are listed in Table 5.2. The rationale for the performance targets is listed in Table 5.3.

DIMENSION OF PERFORMANCE	TYPE OF MEASURE	RATIONALE	KEY MEASURE	PERFORMANCE TARGET
Competitiveness	Membership Stability	Constant or growing membership	Current Year Membership Prior Year Membership	> 1
Competitiveness	Aircraft Selection	Needed for Instrument Rating, ability to fly in adverse weather	Percent of Club Aircraft IFR Certified	80%
Competitiveness	Aircraft Selection	Needed for Commercial and Flight Instructor Rating	Complex Aircraft Available for Rent	Yes
Competitiveness	Aircraft Selection	Needed for Multi-engine, Airline Transport Pilot Rating	Multi-Engine Aircraft Available for Rent	Yes
Competitiveness	Student Pilots	Better than average completion rate	Completion Rate	90%
Financial Performance	Net Income	Not losing money	Revenue - Expenses	> 0
Financial Performance	Restricted Cash	Ability to sustain aircraft	$\Sigma[\text{Percent of Life Used} * \text{Overhaul Price}] / \text{Restricted Cash Balance}$	100%
Financial Performance	Investment	Ability to replace aircraft	$[\text{Age of Aircraft} / \text{Life Expectancy} * \text{Replacement Cost}] / \text{Investment}$	100%
Quality of Service	Training Supplies	Offering supplies pilots want	Turnover Rate for Each Item	3 Months
Quality of Service	Completion Rate	Providing quality instruction and encouragement	Check Ride Pass Rate	90%
Quality of Service	Time to Completion	Efficiency, ability to maintain pilot interest in flying	Months from Start to License	6 Months
Quality of Service	Aircraft Reliability	Dependable aircraft, pilots feel safe flying them	Cancelled Flights due to Unscheduled Maintenance	1 per 100 hours
Resource Utilization	Aircraft Utilization	Aircraft is profitable and covers a portion of club overhead	Average Hours per Month	> 35 Hours

Table 5.2 – Performance Dimensions To Performance Targets

TYPE OF MEASURE	KEY MEASURE	PERFORMANCE TARGET	RATIONALE FOR TARGET
Membership Stability	<u>Current Year Membership</u> Prior Year Membership	> 1	Need stable or growing membership to prevent club overhead from becoming an excessive burden
Aircraft Selection	Percent of Club Aircraft IFR Certified	80%	Keeps all club owned aircraft IFR certified
Aircraft Selection	Complex Aircraft Available for Rent	Yes	Needed to train for Commercial Rating
Aircraft Selection	Multi-Engine Aircraft Available for Rent	Yes	Needed to train for Multi-Engine and Airline Transport Ratings
Student Pilots	Completion Rate	90%	Students are receiving adequate instruction to allow them to earn their license
Net Income	Revenue - Expenses	> 0	Non-Profit but covers all club expenses
Restricted Cash	Σ [Percent of Life Used * Overhaul Price] / Restricted Cash Balance	100%	Covers normal overhaul components to sustain airworthiness for all operational aircraft
Investment	[Age of Aircraft / Life Expectancy * Replacement Cost] / Investment	100%	Ensures club saves sufficient funds to replace aircraft
Training Supplies	Turnover Rate for Each Item	3 Months	BUPERS 1710.22 requires that no supplies in excess of immediate requirements be kept on hand
Completion Rate	Check Ride Pass Rate	90%	Ensures training and instruction are good enough to pass flight tests, allows instructors to skip their next bi-annual re-currency training session
Time to Completion	Months from Start to License	6 Months	A period longer than 6 months could effect the likelihood of the student completing training
Aircraft Reliability	Cancelled Flights due to Unscheduled Maintenance	1 per 100 hours	Maintenance procedures are catching discrepancies
Aircraft Utilization	Average Hours per Month	> 35 Hours	BUPERS 1710.22 says 35-40 is the ideal monthly revenue hours per aircraft

Table 5.3 – Performance Targets Rationale

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VI. CONCLUSIONS AND RECOMMENDATIONS

A. BOARD OF DIRECTORS

The lack of long-term planning is likely to be a critical issue because by the time Monterey Navy Flying Club's aircraft are nearing the end of their service life, insufficient time will be available to raise the necessary funds to purchase replacement aircraft. This will be exacerbated by the fact that older aircraft will require increased amounts of maintenance to maintain airworthiness while the club is trying to raise additional funds to acquire replacement aircraft.

The Board needs to switch to a long-term focus. The first step is for the Board to determine their vision or goals for the club. Based on the vision, the Board should develop and articulate the strategy to reach the stated vision. Finally, the Board must create a plan to achieve the goals.

B. MANAGERIAL DUTIES

The control systems the manager uses on a daily basis are primarily manual. This makes it difficult to accomplish all her tasks in the 40 hours per week for which she is paid. There are routine tasks that could be automated in such a fashion that would result in net time-savings to the manager. Automation could also improve the accuracy and speed to reconciling accounts and reports at the end of each month.

The club should develop a computer-based management system. Member billing, aircraft usage, actual fuel and oil usage could all be compiled from data off the aircraft books. Parts costs and labor hours could be input to this system. By doing this, the end of month reports could be much quicker to create because the information would already reside in the system. This project could be the basis of a thesis for a student at the Naval Postgraduate School.

C. BUDGETING

1. Addressing of Needs

The current budget process does not adequately address the needs of the flying club. The current budget is annual. There is no reported comparison between the budgeted and the actual results.

The budget should include multiple years. This would help the club understand and plan for future needs. Also, this would help to highlight foreseeable problems before they become a crisis for the club.

2. Board of Directors Involvement

The Board of Directors should become more involved in the budget. The budget impacts what the club is able to do. This should be of great importance to the Board of Directors. Board involvement in the budget would also provide a greater understanding of the cost structure of the club and aid in decision-making.

D. RESTRICTED CASH

1. Method and Cash Flows

The restricted cash account is a good method to save for expenses that do not occur on an annual basis such as engine and prop overhauls, avionics replacement, paintjobs, and other miscellaneous aircraft upgrades.

To ensure that the rate at which funds are being deposited into the account is sufficient to cover expected expenses, a cash flow analysis should be conducted on an annual basis. Given that capital purchases using the restricted cash occur on longer than an annual cycle, the cash flow analysis should be multi-year.

2. Co-mingling of Funds

The co-mingling of restricted cash with the un-restricted cash is not an ideal arrangement. To individuals not intimately familiar with the club accounting system, it is not apparent that the balance in the club bank account is not un-restricted cash. This could lead to decisions that could hurt the club.

The restricted cash account should be in a separate account from the un-restricted cash. This would help to the Board of Directors to understand the true financial condition of the club.

3. Inflation and Earned Interest

The restricted cash is losing value because it is in a non-interest bearing account. This is not in the clubs' best interest. The longer the funds sit in the account not earning interest the greater the loss in value.

The funds should be invested conservatively based upon future need. Only safe investments such as government insured bonds or Certificates of Deposit should be used. At the very least, funds should be held in an interest bearing bank account.

Funds reserved for aircraft replacement should be invested. Since aircraft can be expected to last thirty to forty years [Ref 4], the effect of compounding interest through investing would be beneficial.

The proper amount to be invested needs further research to determine the required funding for aircraft replacement. The intended type of replacement will affect the required amount of capital. For example, buying a replacement of the same aircraft type and age will cost approximately the insured value while a brand new aircraft will cost several times the insured value [Refs. 13, 14, Table 2.1].

E. BILLING OF MEMBERS

The pay as you go system is time consuming for management and members. Allowing block time or other discounts or incentives would make it more attractive to members to use the aircraft.

The club should seek a waiver to allow members the option to purchase block flight time with a small discount. The club should also investigate other incentives such as discounts for paying the entire years dues at the beginning of the year. Interest gained from keeping the money in an interest bearing account will partly offset the loss due to a discount.

F. PAYMENT OF INVOICES

The current system is adequate as long as the manager is able to monitor invoice status. Since the purchasing procedures are currently paper-based this can be difficult to accomplish during busy periods. A tracking system with daily reminders may be helpful; however this is not a high priority.

G. AIRCRAFT USAGE

The current paper-base system is outdated. The club is losing revenue from flights because members do not want to drive all the way out to the club to see if an aircraft is available.

The club should move the aircraft scheduling and Clearing Authority duties to an online system. If the North Island Navy Flying Clubs system does not meet the clubs' requirements or is taking too long to become operational, other commercially available systems are available at competitive prices [Ref 18]. Another option would be for a thesis student at the Naval Postgraduate School to develop such a system.

H. PILOT ACTIVITY

The club does not adequately analyze pilot activity. The current paper-based system requires too much time to gather the data.

The club should gather and analyze pilot activity statistics when the online scheduling system is implemented. This information can help the club keep member utilization of club services and aircraft at a level that results in lower costs to the membership.

I. PERFORMANCE MEASURES

The current measures in use are inadequate. Chapter V presents an alternative set of measures for Monterey Navy Flying Club. The process in Chapter V provides a means for the club to assess its operations and modify the performance measures in Table 5.2.

J. SUMMARY

This thesis identified and evaluated the management control systems in use at Monterey Navy Flying Club. It also provided a set of performance measures for the club. These performance measures are intended to provide a basis for the club to evaluate its performance. By conducting a self-evaluation the club will better understand its operations and make any changes necessary to ensure long-term survival and quality service to its members.

APPENDIX A - INTEVIEW QUESTIONS AND ANSWERS

Manager Interview

Question: How long have you worked at Monterey Navy Flying Club?

Question: Prior to the closure of Fort Ord, did the club ever experience any cash shortages?

Question: What were the impacts of these shortages, i.e. what step did the club have to take, what could they not do?

Question: When did the club start?

Question: Prior to the closure of Fort Ord, how many members and flight hours did the club have in an average month?

Question: How many aircraft did MNFC have and who owned them?

Question: How long has the Business Manager position at NPS MWR been vacant?

Question: What would happen to the hangar and fuel tank if the club were to move to another airport?

Question: Do many members join just to fly the T-34B?

Question: Would it be fair to say that prior to the closure of Fort Ord that the fixed income from dues covered club overhead, i.e. the airplanes didn't have to cover any club overhead?

Question: Did the club do any long-term planning in the past?

Question: Why didn't the club do long-term planning?

Question: So how did the club pay for the hangar and fuel tank?

Question: Does the Board of Directors concern themselves with the long-term sustainability of the club or with the current concerns of the club?

Question: How often has the Board of Directors "borrowed" from the restricted cash account and were the funds paid back?

Question: Does the Board of Directors distinguish between restricted and un-restricted cash?

Question: What kind of engine replacement cycle is MNFC on?

Question: Why does Monterey Navy Flying Club pay so much for insurance?

Question: How are the rates determined?

Question: Does Monterey Navy Flying Club have an aircraft replacement plan?

Question: Has any money been saved for eventual aircraft replacement?

Question: So the current aircraft have to last indefinitely for the club to continue operations?

Question: What happens when the current club aircraft are no longer able to be kept airworthy?

Question: Has the BOD come up with a workable plan to pay for the T-34B Airworthiness Directive?

Question: Has any money been saved for the Airworthiness Directive?

Question: Has the Board of Directors considered any workable plans to acquire aircraft?

Question: What does the Board discuss at its meetings?

Question: Do you receive any assistance from the membership?

Question: Prior to moving under MWR, did the club do a budget and who looked at the budget?

Question: Under the current budget process, who looks at the budget?

Question: After the budget is submitted and approved, who looks at it?

Question: So there is no comparison between the planned and the actual?

Question: You used to calculate how much money to put into restricted cash each month based on hours flown. How do you do it now?

Question: Is the restricted cash accumulating at a sufficient rate to cover the engine overhauls when they are expected to come due?

Question: Now that members can use credit card to pay for flight time, has that been beneficial to you and the club?

Question: How do you track individual members bills and vendors invoices?

Question: You create a monthly aircraft revenue and expense report. Who looks at that? What is on it?

Question: What monthly fixed club overhead expenses are there? What are the amounts?

Question: How long are signed flight plans kept on file?

Question: Is the club making its break-even goals in an average month?

Question: What are the break-even goals for each aircraft vs. its actual average revenue flight hours?

Question: What can members be put on the grounded list for?

Question: Do the same members get elected to the board year after year and what is the effect?

Question: Can you give some examples?

Question: Would you describe your control systems as more manual or automated?

Question: Does the budget address future needs?

Question: Is the restricted cash a separate account?

Question: Is the clubs bank account interest bearing?

Question: How much is in the clubs bank account in a normal month?

Question: Does the club keep credit card numbers on file and do you have to punch the numbers into the credit card reader each time you process a charge to a member's card?

Question: Who does the clubs accounting now?

Question: Are they adequately staffed?

Question: Does MWR get the checks out on time?

Question: The club got charged because MWR didn't do its job?

Question: The check to Lycoming to examine the engine for N84604 spent a week under a pile of papers while the club has to insure that aircraft (an expense) and is losing the revenue since it can't fly without its engine?

Question: Does anyone ever look at the old flight plans?

Question: When is the club moving to the on-line schedule system?

Question: Can pilot and aircraft usage statistics be obtained from the on-line system?

Mechanic Interview

Question: Does the T-34B Airworthiness Directive have to be complied with to fly the aircraft?

Question: Why are there five T-34's in storage?

Question: What happened to the T-41B?

Question: How old are the T-34B's and T-41?

Question: What are the engine replacement costs for Monterey Navy Flying Club's aircraft?

Leisure Services Director Interview

Question: How much and what kind of expertise does MWR have with flying clubs?

Question: Would the MWR business manager help the club with things like planning, direction setting, and implementation?

Question: Does MWR have the resources to adequately fulfill this role?

APPENDIX B - DEPRECIATION SCHEDULE

Aircraft	Date Purch.	Cost	Depreciation										Book Value
			Thru 92	93	94	95	96	97	98	99	00	Total	
N68282 & Engine	Feb-85	10,250	10,250									10,250	
282 Engine #2	Feb-89	7,217	5412	1805								7,217	
N7817G & Engine	Oct-79	11,750	11750									11,750	
17G Radios	Sep-89	1,800	1,800									1,800	
17G Paint	Jul-88	2,500	2,083	417								2,500	
17G Interior	Aug-99	14,887								104	1,478	1,582	13,305
17G Engine #3	Aug-00	12,438									207	207	12,231
N9274Z & Engine	Sep-89	3,747	3,747									3,747	
74Z Engine #2	Jun-92	5,667	945	945	945	945	945	942				5,667	
N8244E & Engine	Aug-89	2,500	2,500									2,500	
44E Engine #2	Mar-91	3,500	2,500	1,000								3,500	
44E Radios	Jul-88	800	800									800	
N3403F & Engine	Oct-87	4,600	4,600									4,600	
03F Engine #3	Aug-91	3,500	1,167	1,167	1,166							3,500	
N1870 & Engine	Sep-86	5,000	5,000									5,000	
870 Engine #2	Jan-91	7,847	3,693	1,847	2,307							7,847	
870 Wing Replacement & Paint	Mar-92	15,252	2,542	2,542	2,542	2,542	2,542	2,542				15,252	
870 Fuselage Paint	Dec-92	3,847		641	641	641	641	641	642			3,847	
N84604 & Engine	Jun-93	20,100		3,350	3,350	3,350	3,350	3,350				16,750	3,350
604 Radios	Nov-95	8,860					2,953	2,953	2,954			8,860	
Total Cost		146,062											
Total Deprec Exp			58,789	13,714	10,951	7,478	10,431	10,428	3,596	104	1,685	117,176	
Buildings & Facilities	Date Purch.	Cost	Depreciation										Book Value
			Thru 92	93	94	95	96	97	98	99	00	Total	
Trailer	Jan-82	22,544	5,636	564	564	564	564	564	564	564	564	10,148	12,396
Office & Shop	Prior '86	7,400	7,400									7,400	
Hangar Project	92/93	124,019		4,997	5,689	5,689	5,689	5,689	5,689	5,689	5,689	44,820	79,199
Total Cost		153,963											
Total Deprec Exp			13,036	5,561	6,253	6,253	6,253	6,253	6,253	6,253	6,253	62,368	91,595
Total Accum Deprec.			71,825	19,275	17,204	13,731	16,684	16,681	9,849	6,357	7,938	179,544	91,595

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APPENDIX C - PERFORMANCE MEASUREMENT QUESTIONS

Organization Level - Data to gather rather than questions to answer

- What is the vision/mission of the organization?
- What is the organization's unique competency?
- What are the organization-level dimensions of performance?
- What are the organization-level measures?
- What are the organization-level performance targets?

Process Level

Linked to Organization (Not all are necessarily linked/related to your processes)

- How do my processes support/relate to the organization-level dimensions of performance?
- How do my processes support/relate to the organization-level measures?
- How can I relate the aspects of my process that relate to the organization-level dimensions of performance and measures? (The answer is partially dependent on the service-type and segregation qualities.)

Customer Focused

- What do my customers value?
- How can I measure what my customers value? (The answer is partially dependent on the service-type and segregation qualities)

Balancing

- Do these measures provide for a balance view of my processes?
- What additional measures would provide a balanced view?
- What additional information do I need to manage the organization/process?
- Do I need to be able to support other initiatives (CPI, TQM, ABC/M, Pricing strategies, Supply Chain Management, etc.)?

Practicality

- Do I have tracking systems in place?
- Is it cost effective to develop the tracking system(s)?
- Which measures that I am already tracking meet the new requirements?
- Which measure will retire with the implementation of the new measures?

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